

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF ONE OF THE COPY/CI DRAWINGS CONTAINING A PART OF CONTRACT NO. WTC-802.071 IN THE SCHEDULE IN WHICH SAID DRAWINGS EXISTED AT THE TIME THE SAID CONTRACT WAS EXECUTED BY THE PARTIES.

DATE 6/21/95 *Sultan A. Aslam* SPEC. WRITER
DATE 8/15/95 *Paul J. Jurek* ENGINEER OF DESIGN

RISER DIAGRAM "A"
STAGE II STEP ① - DWG #E-5
EXCEPT AS NOTED

SCHEDULE STAGE II, STEP ① - TRANSFER LOADS TO BUS #3 & 4 LOAD OUTAGES - SEE NOTE #6

- CONDUIT DESIGNATION - SHUTTLE ELEVATORS -**
- CONTROL FOR SHUTTLE & BANK ELEVATORS**
- CDTS # C-12, C-13, C-N, C-IN, C-SE, C-BE, & C-C
- INSTALL C CDT & WIRE FROM SHUTTLE & BANK ELEVATOR TRANSFER SWITCHES AS SHOWN ABOVE
 - CONNECT ALL CONTROL WIRE AS SHOWN ON DWG #E-97 LEGEND -
- L-1 NORMAL FEEDER TO ELEV.**
- INSTALL L-1 CDT & WIRE FROM SWGR. BUS #3 TO TRANSFER SWITCH
 - INSTALL CDT, L-1 FROM TRANSFER SWITCH TO POINT OF CONNECTION TO EXIST. CDT.
 - REMOVE EXIST. FDR (L-1) FROM PHL EL-A-41W BACK TO EXIST. SWGR.
 - CUT EXIST. CDT. (L-1) & REMOVE TO EXIST. SWGR.
 - MAKE CONNECTION TO EXIST. CDT. AND INSTALL FEEDER FROM TRANSFER SWITCH TO PANEL EL-A-41W VIA P.B. #2 (ENERGIZE)
- A-2 EMERG. FEEDER TO ELEV.**
- INSTALL A-2 CDT & WIRE FROM TRANSFER SWITCH TO EXIST. PANEL #EPC-41A VIA P.B. #3
 - DISCONNECT EXIST. & CONNECT FDR (A-2) AT PANEL (ENERGIZE)
 - DISCONNECT EXIST. & CONNECT CONTROL WIRING DESIGNATED (A-2) ON DWG. #E-97
 - REMOVE EXIST. FDR (A-2) & CONTROL WIRES BACK TO EXIST. ELEV. TRANSFER SWITCH.

- L-7 MOTOR CONTROL CENTER - MCC-N41L**
- INSTALL L-7 CDT & WIRE FROM SWGR. BUS #4 TO MCC-N-41L
 - DISCONNECT EXIST. & CONNECT FDR L-7 AT MCC-N-41L (ENERGIZE)
 - REMOVE EXIST. FDR & CDT, L-7 BACK TO SWGR.
- L-3-TEMP 208/120V TRANSF. ELEC. CLOS. "N" 25-40H FLR'S.**
- INSTALL L-3-TEMP CDT & WIRE FROM SWGR. BUS #4 TO 500KVA TRANSFORMER VIA P.B. #4
 - DISCONNECT EXIST. & CONNECT FDR L-3-TEMP AT TRANSFORMER (ENERGIZE)
 - REMOVE EXIST. FDR L-3 BACK TO SWGR.
- R-1-TEMP 208/120V TRANSF. ELEC. CLOS. "N" 43-58H FLR'S.**
- INSTALL R-1-TEMP CDT & WIRE FROM SWGR. BUS #4 TO 500KVA TRANSFORMER VIA P.B. #4
 - DISCONNECT EXIST. & CONNECT FDR R-1-TEMP AT TRANSFORMER (ENERGIZE)
 - REMOVE EXIST. FDR R-1 BACK TO SWGR.
- L-4b 480/277V ELEC. CLOS. "N" 25H TO 40H FLR'S FUTURE RUN 25H TO 32ND FLR'S**
- INSTALL BUSWAY L-4b FROM SWGR. BUS #3 TO END CAP & "T" TO EXIST. BUSWAY L-4
 - REMOVE EXISTING BUSWAY L-4 TO EXIST. SWGR. REMOVE BACK TO EXIST. SWGR., CAP BUSWAY
 - INSTALL BUSWAY TRANSITION BOX ON EXIST. BUSWAY & CONNECT BUSWAY L-4b. (ENERGIZE)
- L-4a 480/277V ELEC. CLOS. "N" FUTURE RUN 33RD TO 40H FLR'S**
- INSTALL BUSWAY L-4a FROM SWGR. BUS #4 TO END CAP

NOTE

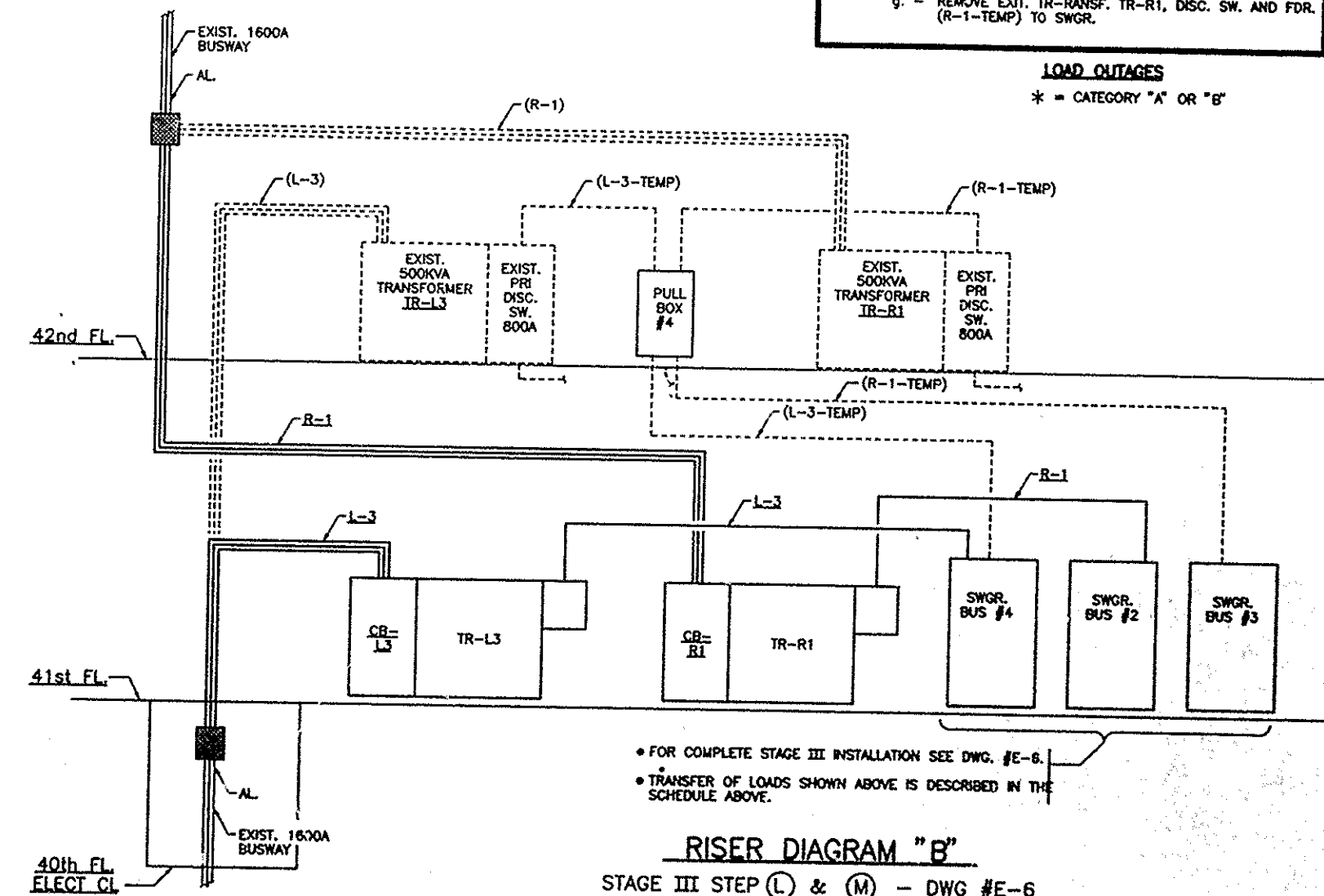
- FOR LEGEND SEE DWG. #E-1, FOR GENERAL NOTES AND ABBREVIATIONS SEE DWG. #E-2.
- FOR NUMBER AND SIZE OF CONDUIT & WIRE SEE:
 - DWG. #E-13 - CONDUIT AND CABLE SCHEDULE
 - DWG. #E-97 - A.T.S. CONNECTION DIAGRAM
- SHUTTLE ELEVATORS #2, 4, 6, & 10 WILL BE WITHOUT POWER DURING THIS OUTAGE. SHUTTLE ELEVATORS #1, 3, 5, & 11 FED FROM SUBSTATION SS-41S WILL PROVIDE SERVICE TO THE 44TH FLOOR LOBBY.
- CONDUIT CABLE AND BUSWAY DESCRIBED IN SCHEDULE STAGE II STEP ① SHALL BE INSTALLED PRIOR TO ENERGIZING BUS #3 & 4.
- SCHEDULE STAGE III STEP ① & ② SHALL BE INSTALLED WITH SWITCHGEAR ENERGIZED.
- ALL ELECTRICAL OUTAGES SHALL BE PERFORMED OUTSIDE NORMAL BUILDING OPERATING HOURS. SEE SPECIFICATIONS DIVISION 1 ENTITLED "CONDITIONS AND PRECAUTIONS" FOR DESCRIPTION OF ELECTRICAL POWER OUTAGE CATEGORIES.

(SEE NOTE #5)

SCHEDULE STAGE III STEP ① & ②
TRANSFER LOADS L-3 & R-1

- L-3 208/120V TRANSF. ELEC. CLOS. "N" 25-40H FLR'S.**
- INSTALL TRANSFORMER TR-L3 WITH CB-L3.
 - INSTALL L-3 CDT & WIRE FROM SWGR. BUS #4 TO TRANSF. TR-L3. (CONNECT AT TRANSF.)
 - INSTALL BUSWAY L-3 FROM CB-L3, END AT EXIST. BUSWAY
 - REMOVE EXIST. BUSWAY TO EXIST. TRANSF. TR-L3.
 - INSTALL BUSWAY TRANSITION BOX ON EXIST. BUSWAY & CONNECT BUSWAY L-3.
 - DISCONNECT EXIST. FDR, L-3-TEMP AND CONNECT FDR, L-3 AT SWGR. (ENERGIZE)
 - REMOVE EXIST. TRANSF. TR-L3, DISC. SW. AND FDR. (L-3-TEMP) TO SWGR.
- R-1 208/120V TRANSF. ELEC. CLOS. "N" 43-58H FLR'S.**
- INSTALL TRANSFORMER TR-R1 WITH CB-R1.
 - INSTALL R-1 CDT & WIRE FROM SWGR. BUS #2 TO TRANSF. TR-R1. (CONNECT AT TR-RANSF.)
 - INSTALL BUSWAY R-1 FROM CB-R1, END AT EXIST. BUSWAY
 - REMOVE EXIST. BUSWAY TO EXIST. TR-RANSF. TR-R1.
 - INSTALL BUSWAY TRANSITION BOX ON EXIST. BUSWAY & CONNECT BUSWAY R-1.
 - DISCONNECT EXIST. FDR, R-1-TEMP AND CONNECT FDR, R-1 AT SWGR. (ENERGIZE)
 - REMOVE EXIST. TR-RANSF. TR-R1, DISC. SW. AND FDR. (R-1-TEMP) TO SWGR.

LOAD OUTAGES
* = CATEGORY "A" OR "B"



RISER DIAGRAM "B"
STAGE III STEP ① & ② - DWG #E-6

THE PORT AUTHORITY
OF NY & NJ

ENGINEERING PROGRAM MANAGER
WORLD TRADE CENTER
S. J. Jurek
CHIEF ELECTRICAL ENGINEER

Engineering Department
Design Divisions
The World Trade Center
Electrical/HVAC
Upgrade Program

Title
TOWER ONE AND TWO LOW VOLTAGE SUBSTATIONS CONSTRUCTION AND INSTALLATION

ELECTRICAL
SUBSTATION SS-41N STAGE II & III LOAD TRANSFER SCHEDULE AND RISER DIAGRAM

No.	Date	Revision	Approved
1	5-1-85		LEAHY/FISCHER
2			LEAHY
3			A.S.

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

Designed by: LEAHY/FISCHER
Drawn by: LEAHY
Checked by: A.S.

Date 5-1-85 Scale AS NOTED

Contract Number: WTC 802.071
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